

PATENT APPLICATION
of
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for
SIPPER CUP WITH MEDICINE DISPENSER
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SIPPER CUP WITH MEDICINE DISPENSER

BACKGROUND

The present disclosure relates to cups, and particularly to sipper cups for juveniles. More particularly, the present disclosure relates to dispensers for
5 medicines and drinking liquids.

Many patients prefer to drink water or other liquids after receiving medicine as a liquid, powder, tablet, or capsule. In many instances, the medicine is consumed in a location that does not have a source of drinking liquid readily
10 available.

SUMMARY

A sipper cup comprises a liquid container and a closure coupled to the liquid container. A medicine container is arranged to extend into the liquid container and is accessed through a top opening formed in the closure. The closure includes a
15 spout formed to include a passage to allow a drinking liquid to be drawn from a liquid storage chamber formed in the liquid container after a patient has consumed medicine stored in the medicine container.

In illustrative embodiments, a lid is mounted for movement on the closure to cover and uncover the top opening to control movement of medicine into
20 and out of a medicine storage chamber formed in the medicine container. A stabilizer is coupled to the closure and arranged to help support the medicine container in an upright position on an underlying surface following removal of the closure from the liquid container.

A retainer included in the closure is configured to mate with the liquid
25 container to close an open mouth of the liquid container and to support the medicine container in a fixed position in the liquid storage chamber. In an illustrative embodiment, the retainer is a band that surrounds an annular rim of the closure. The annular rim is formed to include the spout and to support a lip receiver. The lip receiver is located adjacent to the top opening and adapted to contact a mouth-lip area
30 of a patient consuming medicine extant in the medicine storage chamber.

In an illustrative embodiment, the medicine container includes tiered chamber sections to facilitate volumetric measurement of medicine dispensed into the medicine container. The closure includes a top wall formed to include the top opening into the medicine storage chamber. The closure is monolithic and the top
5 wall is integral with the "tiered" medicine container.

Features of the present disclosure will become apparent to those skilled in the art upon consideration of the following detailed description of illustrative embodiments exemplifying the best mode of carrying out the disclosure as presently perceived.

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BRIEF DESCRIPTION OF THE DRAWINGS

The detailed description particularly refers to the accompanying figures in which:

Fig. 1 is a perspective view of a sipper cup in accordance with the
15 present disclosure showing tipping of the cup by a user to discharge a liquid medicine from a medicine storage chamber provided in the cup;

Fig. 2 is a view similar to Fig. 1 showing tipping of the cup (after rotation of the cup through a 180° angle about a central axis) by a user to discharge a drinking liquid from a spout coupled to a liquid storage chamber provided in the cup;

20 Fig. 3 is a perspective view of the sipper cup of Figs. 1 and 2, with portions broken away, showing a medicine container suspended in a larger liquid container;

Fig. 4 is an exploded perspective view of components included in the sipper cup of Figs. 1-3;

25 Fig. 5 is a perspective view of the closure and rotatable lid shown in Fig. 4;

Fig. 6 is a side elevation view of the unit shown in Fig. 5, with portions broken away, showing liquid medicine being dispensed into the medicine container after movement of the lid relative to the closure to provide an opening into the
30 medicine storage chamber formed in the medicine container;

Fig. 7 is a perspective view of a closure and lid in accordance with another embodiment of the present disclosure; and

Fig. 8 is a side elevation view of the unit shown in Fig. 7.

DETAILED DESCRIPTION

A sipper cup 10 can be oriented in one way to dispense a medicine 12
5 to a patient as suggested in Fig. 1 and then oriented in another way to dispense a
drinking liquid 14 to a patient as suggested in Fig. 2. Drinking liquid 14 is stored in a
liquid reservoir provided in sipper cup 10 that is separate from a medicine reservoir
provided for medicine 12 to avoid intermixing of medicine 12 and drinking liquid 14
stored in cup 10. A patient may consume drinking liquid 14 using sipper cup 10 to
10 "wash down" medicine 12 consumed earlier also using sipper cup 10. It is within the
scope of this disclosure to use sipper cup 10 to dispense medicine 12 in liquid,
powder, tablet, capsule, or other suitable form.

As shown, for example, in Figs. 3 and 4, sipper cup 10 includes a
liquid container 16 formed to include a liquid storage chamber 18 for drinking liquid
15 14 and a medicine container 20 formed to include a medicine storage chamber 22 for
medicine 12. An over-molded grip 17 is appended to an exterior surface of liquid
container 16 in the illustrated embodiment of cup 10.

Sipper cup 10 also includes a closure 24 coupled to liquid container 16
to close an open mouth 26 of liquid container 16. As suggested in Figs. 3 and 4,
20 medicine container 20 is coupled to an underside of closure 24 to lie in liquid storage
chamber 18 when closure 24 is coupled to liquid container 16 and to move with
closure 24 when closure 24 is uncoupled from liquid container 16.

A lid 28 is mounted for movement relative to closure 24 between an
opened position shown, for example, in Figs. 1 and 6 and a closed position shown, for
25 example, in Figs. 2 and 5. In the opened position, lid 28 is arranged to allow
discharge of medicine 12 extant in medicine storage chamber 22 through a top
opening 30 as suggested in Fig. 1. In the closed position, lid 28 is arranged to block
discharge of medicine 12 extant in medicine storage chamber 22 through top
opening 30.

30 A stabilizer 32 is coupled to closure and arranged to extend into liquid
storage chamber 18 when closure 14 is coupled to liquid container 16 as suggested in
Figs. 3 and 4. Stabilizer 32 cooperates with medicine container 20 to support closure

24 in a stable (e.g., level) position upon removal of closure 24 from liquid container 16 and placement of medicine container 20 as suggested, for example, in Fig. 6. In such a stable position, a caregiver may dispense medicine 12 into medicine storage chamber 22 through top opening 30 easily.

5 A spout 36 is formed in closure 24 to include a passage 35 to allow drinking liquid 14 to be drawn orally by a consumer from liquid storage chamber 18 in liquid container 16 as suggested, for example, in Figs. 2-4. Spout 36 is arranged to terminate at a tip 38 located a selected distance 39 above a top wall 40 of closure 24 as suggested in Fig. 6. Spout 36 is formed to include liquid discharge opening 37 in
10 tip 38.

 Medicine container 20 is coupled to closure 24 to extend into liquid storage chamber 18 and is arranged to allow medicine 12 to be dispensed from medicine storage chamber 22 without intermixing with drinking liquid 14 extant in liquid storage chamber 18. In the illustrated embodiment, top wall 40 of closure 24 is
15 formed to include top opening 30 providing access into medicine storage chamber 22.

 Lid 28 includes a plate 42 and a plate mount 44 coupled to an underside 46 of plate 42 as suggested, for example, in Figs. 4 and 6. Plate mount 44 is coupled to top wall 40 to support plate 42 for movement between the opened position shown in Fig. 1 and the closed position shown in Fig. 2. In the illustrated
20 embodiment, plate mount 44 is an axle arranged to extend through an aperture 45 formed in top wall 40 to support plate 42 for rotation relative to top wall 40 about an axis 48. In the illustrated embodiment, plate mount 44 includes cylindrical shaft 41 sized to extend through and rotate in aperture 45 and retainer plug 43 sized to limit removal of lid 28 from top wall 40 of closure 24.

25 Plate 42 of lid 28 is formed to include a notch 50 as shown, for example, in Figs. 1 and 4. Notch 50 is sized and located to be aligned with top opening 30 formed in top wall 40 upon movement of lid 28 to the opened position to allow medicine 12 extant in medicine storage chamber 22 to pass through notch 50 as medicine 12 is discharged from medicine storage chamber 22. In the illustrated
30 embodiment, plate 42 is crescent-shaped and includes a convex curved (e.g., circular) first perimeter edge 51. Plate 42 also includes a concave second perimeter edge 52 configured to define notch 50.

As suggested in Figs. 2 and 5, plate 42 is movable relative to top wall 40 of closure 24 to cover and uncover top opening 30. A plate handle 54 is coupled to an upwardly facing surface 58 of plate 42. Plate handle 54 is arranged to extend upwardly away from top wall 40 of closure 24 to provide means for moving (e.g.,
5 rotating) plate 42 relative to top wall 40 (e.g., about axis 48) to cover and uncover top opening 30.

Tip 38 of spout 36 and top wall 40 of closure 24 cooperate to define a lid-movement region (represented by dimension 39) therebetween as suggested in Fig. 6. Lid 28 is confined to remain in this lid-movement region during movement of
10 lid 28 between opened and closed positions.

As shown in Figs. 3 and 4, closure 24 includes a retainer 60 configured to mate with liquid container 16 to hold medicine container 20 in a fixed position in liquid storage chamber 18. In the illustrated embodiment, retainer 60 is a band formed to include internal threads sized and shaped to engage external threads
15 provided on liquid container 16. It is within the scope of this disclosure to configure retainer 60 in any suitable manner to couple closure 24 to liquid container 16.

An annular rim 62 is also included in closure 24 as shown in Figs. 1-4. Annular rim 62 is interposed between top wall 40 and retainer 60. In the illustrated embodiment, annular rim 62 is formed to include a lip receiver 64 arranged to extend
20 upwardly away from retainer 60. Annular rim 62 is placed in a location adjacent to top opening 30 into medicine storage chamber 22 and adapted to contact a mouth-lip area of a patient consuming medicine 12 extant in medicine storage chamber 22. Spout 36 is arranged to extend upwardly away from retainer 60 to locate liquid discharge opening 37 formed in spout 36 at a select distance 39 above top wall 40 to
25 block discharge of drinking liquid 14 extant in liquid storage chamber 18 through liquid discharge opening 37 during discharge of medicine 12 extant in medicine storage chamber 22 through top opening 30 and notch 50 as suggested, for example, in Fig. 1. Spout 36 and lip receiver 64 are arranged to lie in spaced-apart, diametrically opposed relation to one another along a perimeter of top wall 40 as
30 suggested in Figs. 1 and 2.

It is within the scope of this disclosure to adapt lid 28 so that it can be mounted for sliding movement relative to top wall 40 and the top opening 30 formed

therein to cover and uncover top opening 30. Handle 54 may be used to slide lid 28 back and forth between opened and closed positions.

As shown in Fig. 6, stabilizer 32 and medicine container 20 cooperate to provide means for supporting top wall 40 in a level position relative to underlying surface 34 upon removal of closure 24 from liquid container 16 and placement of medicine container 20 on underlying surface 34. In the embodiment illustrated in Figs. 1-6, stabilizer 32 is a semicircular wall having a curved top edge 66 (see Fig. 4) appended to downwardly facing surface 68 of top wall 40 and having a concave surface 70 facing toward medicine container 20. The height of stabilizer 32 is equal to the height of medicine container 20 in the illustrated embodiment as suggested in Fig. 6. In the embodiment illustrated in Figs. 7 and 8, a stabilizer 132 is provided instead of stabilizer 32. Stabilizer 132 includes a pair of vertical, spaced-apart posts 133, 134. Each post 133, 134 has a height equal to the height of medicine container 20.

Medicine container 20 is formed to include tiered chamber sections 121, 122, 123, and 124 in the illustrated embodiment as suggested in Figs. 3-6. These sections 121, 122, 123, and 124 provide "stepped increments" to facilitate measurement (by volume) of medicine 12 extant in medicine storage chamber 22. As suggested in Fig. 3, dimension 101 represents the volume of section 121, dimension 102 represents the combined volumes of sections 121 and 122, and dimension 103 represents the combined volumes of sections 121, 122, and 123. A side wall of medicine container 20 is transparent or translucent to permit a caregiver to inspect the level of medicine 12 dispensed into tiered chamber sections 121, 122, 123, and 124 in the environment shown, for example, in Figs. 6 and 8. The graduations provided by these tiered chamber sections facilitate volumetric measure of medicine 12 dispensed into medicine storage chamber 22.

A monolithic dispenser cover 116 is configured to be coupled to liquid container 16. Monolithic dispenser cover 116 is shown, for example, in Figs. 3-5 and includes top wall 40, stabilizer 32, retainer 60, rim 62, spout 36, and medicine container 20. Uppermost tiered chamber section 124 of medicine container 20 merges monolithically with top wall 40 at top opening 32 as shown best in Fig. 6.